

IN THE CLAIMS:

The following is a complete listing of claims in this application.

Claims 1-14 (canceled).

15. (new) Machine with an electromechanical converter, comprising:

a closed tubular cylinder having tight end chambers;

a linear movable piston supporting a row of centrally placed tubular magnetic elements in the form of permanent magnets or coils, and arranged within the closed tubular cylinder to operate as a working element in a motor or a generator and which is provided with magnetic elements which establish an outwardly directed electrical field of force,

the end chambers being sufficiently tight that at each end of the piston there is formed a gas spring of high pressure providing a resonance-effective arrangement; and

a row of tubular coordinated coils or permanent magnets disposed around the piston within the cylinder for increasing piston area of the machine and/or length of stroke of the piston,

interaction between magnetic fields of the coordinated coils or permanent magnets and the magnetic elements obtaining energy transmission upon axial movement of the piston in the cylinder.

16. (new) Machine according to claim 15, wherein the piston comprises a concentric row of tubular magnetic elements which are placed with a mutual intermediate gap, in which gaps are arranged tubular coil arrangements with the coordinated coils for increasing the area of the piston.

17. (new) Machine according to claim 16, wherein the piston, is at least on one end, connected to a piston bar, said piston bar being guided out through an end chamber for transferring mechanical energy to or from the machine.

18. (new) Machine according to claim 16, wherein the piston has a mass over 4 kg.

19. (new) Machine according to claim 16, wherein the machine has a length of stroke of about 10 cm and the piston has an area greater than 0.03 m².

20. (new) Machine according to claim 16, wherein there is a pressure inside the cylinder at each side of the piston in end chambers over 10 bar.

21. (new) Machine according to claim 20, wherein the pressure is greater than 30 bar.

22. (new and withdrawn) Machine according to claim 15, wherein the cylinder has walls formed of a thin-walled tube made out of electrically and magnetically non-conductive material, which works as a slide bearing, and which serves as support for windings of the coil.

23. (new and withdrawn) Machine according to claim 22, wherein a helical spring is placed at least at one end of the cylinder, to a central rest position of the piston in a vertical installation.

24. (new and withdrawn) Machine according to claim 22, wherein the permanent magnets are multipolar, and assembled of a plurality of magnets with or without iron in-between, so that more than two magnetic poles along the piston are formed.

25. (new and withdrawn) Machine according to claim 15, wherein the permanent magnets surround the piston and the coil windings are disposed inside the piston.

26. (new and withdrawn) Machine according to claim 22, wherein the cylinder is constructed and arranged to be connected directly to a load or a driving unit.

27. (new) In combination, a machine according to claim 15, and an element which is constructed and arranged to be vibrated, the machine being placed directly on the element without a piston bar.

28. (new) Combination according to claim 27, wherein the machine is constructed and arranged to be coupled on the rear of a bit of a drill steel for drilling for oil and mining operations, to generate hammer drilling with an ordinary drill.

29. (new) Combination according to claim 27, wherein the machine is constructed and arranged to be coupled to a tube or a beam which is be driven down into the ground.